

WE CLAIM:

1. A mouthpiece comprising:
a vestibular shield having an inner surface and an outer surface, said vestibular shield
5 having a predetermined height which will overlap a user's teeth and gums when positioned in the mouth vestibule of a user;
gases passageway means extending from through said vestibular shield allowing for the passage of said gases through said mouthpiece;
extra-oral sealing means associated with said gases passageway to assist with
10 compression upon a user's face,
gases diffusing means associated with said gases passageway means and said inner surface that in use causes said gases to be diffused when exiting from said gases passageway.
2. A mouthpiece according to claim 1 wherein said vestibular shield is generally
15 rectangularly-shaped having a central portion which will extend over a user's front teeth and gums when said central portion of said vestibular shield is positioned between the lips and the teeth of the user, and outer portions extending from said central portion which extend along and overlap at least a portion of the user's back teeth and gums when said outer portions of said vestibular shield are positioned between the cheeks and the teeth of the user.
3. A mouthpiece according to claim 1 or 2 wherein said gases diffusing means is an
20 outlet part extending through said vestibular shield having at least two gases outlets that allow for a diffused flow of said gases into the patients mouth.
4. A mouthpiece according to any one of claims 1 to 3 wherein said at least two gases outlets are angled toward the sides of the user's mouth.
5. A mouthpiece according to any one of claims 1 to 3 wherein said gases diffusing
25 means is a plurality of outlets formed in said vestibular shield, where said gases passageway means is at least partially integrally formed in said vestibular shield.
6. A mouthpiece according to any one of claims 1 to 5 wherein said gases passageway means includes gases inlet means for allowing connection of said mouthpiece to a gases supply.
- 30 7. A mouthpiece according to any one of claims 1 to 6 wherein said gases passageway means includes adjustment means that allows for the distance between said vestibular shield and said extra-oral sealing means to be altered, allowing for adjustment dependant on a user's facial contours.

8. A mouthpiece according to claim 7 wherein said gases passageway means is a tubular passageway and said adjustment means are bellows, corrugations or accordion-like pleats formed in the walls of said tubular passageway that are able to in use be moved from a contracted position to a fully extended position.
- 5 9. A mouthpiece according to claim 7 or 8 wherein said adjustment means can be extended from said contracted position to a plurality positions before it is in said fully extended position.
- 10 10. A mouthpiece according to claim 7 wherein said adjustment means is a sleeve engaged with said extra-oral sealing means that is fittable and selectively slideable about said gases passageway means.
11. A mouthpiece according to claim 10 wherein said sleeve has protrusions that engage with complimentary apertures on said gases passageway means.
12. A mouthpiece according to any one of claims 1 to 11 wherein said vestibular shield is formed of a supple material and said gases inlet means is connected to said central portion of said vestibular shield, said gases inlet means comprising a tube formed of a stiffer material than said supple material.
- 15 13. A mouthpiece according to any one of claims 1 to 12 wherein said inner surface of said vestibular shield includes a plurality of channels extending from said central portion out to the edges of said vestibular shield.
- 20 14. A mouthpiece according to any one of claims 1 to 12 said wherein inner surface of vestibular shield includes at least one aperture or ridge that allows for moisture to move about said inner surface of said vestibular shield and the inside of the users mouth.
15. A mouthpiece according to any one of claims 1 to 14 wherein said extra-oral sealing means comprises at least one tapered flap.
- 25 16. A mouthpiece according to any one of claims 1 to 14 wherein a compressive or frictional force is formed between said vestibular shield and said extra-oral sealing means on the area surrounding a user's lips and is sufficient to secure said mouthpiece is placed on a user and to provide a substantial seal thereto.
17. A mouthpiece according to any one of claims 1 to 16 wherein said extra-oral sealing means includes a nose flap connected to at least part of the upper edge of said extra-oral sealing means that in use covers said user's nose.
- 30 18. A mouthpiece according to claim 17 wherein said nose flap causes a seal to be formed about said user's nose preventing the user from nasal breathing.

19. A mouthpiece according to claim 17 wherein a gases pathway communicates between said nose flap and said mouthpiece to allow for simultaneous or alternative breathing from the user's nose and mouth.

20. A system capable of being used for oral delivery of gases to a user comprising:

5 gases supply means,
a gases passageway in fluid communication with said gases supply means, and
a mouthpiece in fluid communication with said gases passageway including an intra-oral sealing means and an extra-oral sealing means and gases diffusing means.

10 21. A system according to claim 20 wherein said extra-oral sealing means is adjustable into one of two conditions, a first condition when said mouthpiece is inserted into a user's mouth being substantially unengaged with a user's face, and a second condition when correctly positioned in a user's mouth being substantially engaged with a user's face and under compression or frictional engagement thereupon.

15 22. A system according to claim 20 or 21 wherein said intra-oral sealing means is a vestibular shield.

23. A system according to any one of claims 20 to 22 wherein said vestibular shield is generally rectangularly-shaped having a central portion which will extend over a user's front teeth and gums when said central portion of said vestibular shield is positioned between the lips and the teeth of the user, and outer portions extending from said central portion which
20 extend along and overlap at least a portion of the user's back teeth and gums when said outer portions of said vestibular shield are positioned between the cheeks and the teeth of the user.

24. A system according to any one of claims 20 to 23 wherein said vestibular shield is formed of a supple material and said gases inlet means is connected to said central portion of said vestibular shield, said gases inlet means comprising a tube formed of a stiffer material
25 than said supple material.

25. A system according to any one of claims 20 to 24 wherein said inner surface of said vestibular shield includes a plurality of channels extending from said central portion out to the edges of said vestibular shield.

30 26. A system according to any one of claims 20 to 24 wherein said inner surface of vestibular shield includes at least one aperture or ridge that allows for moisture to move about said inner surface of said vestibular shield and the inside of the users mouth.

27. A system according to claim 20 wherein said intra-oral sealing means is a shield located in the mouth cavity proper.

28. A system according to claim 27 wherein said mouth cavity proper shield is generally rectangularly-shaped, and is sized so that a central portion extends over the back side of a user's front teeth and gums when said central portion of said shield is positioned behind the teeth of said user, and outer portions extending from said central portion which extend along and overlap at least a portion of the user's back teeth and gums when said outer portions of said shield are positioned behind the teeth of said user.
29. A system according to claim 27 or 28 wherein said mouth cavity proper shield is formed of a supple material and a gases inlet means is connected to said central portion of said shield, said gases inlet means comprising a tube formed of a stiffer material than said supple material.
30. A system according to any one of claims 20 to 26 wherein said gases diffusing means is associated with said gases passageway means and said inner surface of said vestibular shield and which in use causes said gases to be diffused when exiting from said gases passageway.
31. A system according to any one of claims 20 to 26 and 30 wherein said gases diffusing means is an outlet part extending through said vestibular shield having at least two gases outlets that allow for a diffused flow of said gases into the patients mouth.
32. A system according to claim 31 wherein said at least two gases outlets are angled toward the sides of the user's mouth.
33. A system according to claims 31 or 32 wherein said gases diffusing means is a plurality of outlets formed in said vestibular shield, where said gases passageway means is at least partially integrally formed in said vestibular shield.
34. A system according to any one of claims 20 to 33 wherein said extra-oral sealing means includes a nose flap connected to at least part of the upper edge of said extra-oral sealing means that in use covers said user's nose.
35. A system according to claim 34 wherein said nose flap causes a seal to be formed about said user's nose preventing the user from nasal breathing.
36. A system according to claim 34 wherein a pathway communicates between said nose flap and said mouthpiece to allow for simultaneous or alternative breathing from the user's nose and mouth.
37. A system capable of being used for oral delivery of gases to a user comprising:
a mouthpiece,
a breathing tube,
decoupling means for connecting said mouthpiece to said breathing tube, and

means to diffuse gases associated with said decoupling means.

38. A system according to claim 37 wherein said connection tube is an L-shaped elbow including a swivel joint and the end of said elbow that connects with said breathing tube tapers from said joint to said end.

5 39. A system according to claim 37 wherein said tapered end includes said means to diffuse gases, wherein said means to diffuse gases are a plurality of tapered slots.

40. A system according to claim 39 wherein said connection tube is an L-shaped elbow including a swivel joint, wherein said means to diffuse said gases includes a circular ledge formed in said elbows circumference of smaller diameter than said elbows diameter and a
10 plurality of apertures in said ledge that allow for gases to be diffused from said elbow.

41. A system according to claim 39 wherein said connection tube is an L-shaped elbow including a swivel joint, wherein said means to diffuse said gases includes a circular ledge formed in said elbows circumference of smaller diameter than said elbows diameter and a plurality of apertures in said ledge that allow for gases to be diffused from said elbow.

15 42. A system according to claim 39 wherein said connection tube is an L-shaped elbow including a swivel joint, wherein said means to diffuse said gases is a one-way outlet valve.

43. A mouthpiece comprising:

a vestibular shield having an inner surface and an outer surface, said vestibular shield having a predetermined height which will overlap a user's teeth and gums when positioned in
20 the mouth vestibule of a user,

gases passageway means extending through said vestibular allowing for the passage of said gases through said mouthpiece,

extra-oral sealing means associated with said gases passageway to assist with compression upon a user's face, and

25 adjustment means to alter the distance between said vestibular shield and said extra-oral sealing means.

44. A mouthpiece according to claim 43 wherein said adjustment means includes a threaded connection between said extra oral sealing means and said gases passageway means.

45. A mouthpiece according to claims 43 or 44 wherein said gases passageway means has
30 a substantially tubular body having an outer thread and said extra-oral sealing means has associated with it a rotatable sleeve that when rotated on said threaded tubular body causes the distance between said vestibular shield and said extra-oral sealing means to be altered.

46. A mouthpiece according to claim 43 wherein said gases passageway means is a tubular passageway and said adjustment means are bellows, corrugations or accordion-like

pleats formed in the walls of said tubular passageway that are able to in use be moved from a contracted position to a fully extended position.

47. A mouthpiece according to claim 46 wherein said adjustment means can be extended from said contracted position to a plurality positions before it is in said fully extended position.

48. A mouthpiece according to claim 43 wherein said adjustment means is a sleeve engaged with said extra-oral sealing means that is fittable and selectively slideable about said gases passageway means.

49. A mouthpiece according to claim 48 wherein said sleeve has protrusions that engage with complimentary apertures on said gases passageway means.

50. A mouthpiece comprising:

a vestibular shield having an inner surface and an outer surface, said vestibular shield having a predetermined height which will overlap a user's teeth and gums when positioned in the mouth vestibule of a user;

gases passageway means extending from through said vestibular allowing for the passage of said gases through said mouthpiece;

extra-oral sealing means associated with said gases passageway to assist with compression upon a user's face,

nose attachment connected to at least part of the upper edge of said extra-oral sealing means which in use covers or abuts said user's nose.

51. A mouthpiece according to claim 50 wherein said nose attachment is a nose flap connected to at least part of the upper edge of said extra-oral sealing means that in use covers said user's nose.

52. A mouthpiece according to claim 51 where there is a passageway formed between said extra-oral sealing means and said nose flap allowing said user to breath gases through their nasal or mouth cavities.

53. A mouthpiece according to claim 51 wherein said nose flap causes a seal to be formed about said user's nose preventing the user from nasal breathing.

54. A mouthpiece according to claim 50 wherein said nose attachment is a blocking member to block said user's nose.

55. A mouthpiece according to claim 50 wherein said nose attachment is a pair of nasal cannula extending above said extra-oral sealing means and attached to said gases passageway, to supply gases to said user's nasal cavities.

56. A mouthpiece as herein described with reference to Figures 3 to 24.

57. A system capable of being used for oral delivery of gases to a user as herein described with reference to Figures 3 to 24.